

Document/ Section	EPA Comment	Response
<p>From the cover letter:</p> <p>The U.S. Environmental Protection Agency (EPA) has received and reviewed the Draft Remedial Investigation Report for the Route 561 Dump Site dated February 27, 2015. EPA's comments are enclosed.</p> <p>In accordance with the Administrative Order on Consent Section VII, paragraph 27.g (Task VII) the revised RI Report is due to EPA thirty (30) from receipt of this letter.</p> <p>Response:</p> <p>In July 2013, Sherwin-Williams submitted to the EPA the Site Characterization Summary Report (SCSR) for the Route 561 Dump Site. The SCSR was very similar to the Draft Remedial Investigation Report (RIR) and contained all of the conclusions regarding delineation of constituents in soil and sediment, surface water transport, and groundwater flow and characterization (except for one monitoring well) presented in the Draft RIR. Sherwin-Williams met with EPA on September 12, 2013 and presented the findings of the SCSR, including the conclusions regarding surface water transport, delineation of constituents in soil and sediment, and groundwater flow and characterization (again, except for one monitoring well). At EPA's request, Sherwin-Williams re-sampled the one monitoring well in question to resolve the outstanding question regarding the presence of metals. On November 13, 2013, Sherwin-Williams received from the EPA comments on the SCSR. Sherwin-Williams' responses to these comments were, as directed by EPA, incorporated into the Draft RIR.</p> <p>EPA's February 2015 comments on the conclusion presented in the Dump Site RIR were unexpected, as these conclusions had been included in the SCSR and were presented to the EPA in the presentation on the SCSR. However, this Response to Comments addresses the comments, and the RIR incorporates all of the applicable comments provided by EPA and NJDEP. In some instances, the text of the RIR has been revised to eliminate the portions to which a comment applied. The response to these comments notes these changes.</p> <p>The requested revised tables/figures noted in the comments were provided to EPA as requested. The responses to these comments provide the dates of submission.</p>		
General Comments		
1	<p>One of the main conclusions made in this report is that downstream transport of site-related constituents is limited and that the downstream portion of White Sand Branch is not being impacted by site-related contamination. This conclusion is largely being supported by surface water data from the downstream portions of White Sands Branch that have lower levels of site-related concentrations than the levels found in White Sand Branch surface water data collected on the Dump Site Fenced Area property (the upstream area). However, this conclusion does not take into consideration that the downstream area has slightly elevated pore water concentrations, high sediment concentrations, or soil boring data that shows higher concentrations in the flood plain compared to the areas outside the flood plain zone.</p>	<p>The RIR clearly identifies the presence of constituents in sediment and flood plain soil in and adjacent to White Sand Branch, downstream of the Dump Site Fenced Area. There is no dispute that constituents were, at one time, transported from the Dump Site Fenced Area downstream in White Sand Branch. The RIR is not using "surface water concentrations alone" to determine "if the downstream area is impacted or not." All of the soil and sediment data along and in White Sand Branch are presented and compared to their respective screening criteria. These data have also been used in the BERA and HHRA, and will be incorporated into the Feasibility Study.</p>

Document/ Section	EPA Comment	Response
	<p>The surface water flow in the portion of the White Sand Branch on the Dump Site Fenced Area property, while a strong mechanism of contaminant transport, is intermittent as shown on the maps. The downstream White Sand Branch is fed in variable amounts by Clement Lake, precipitation, and groundwater. Thus, surface water concentrations alone should not be used as a determining factor if the downstream area is impacted or not. There are other supporting data (e.g. sediment and soil) that suggest the White Sand Branch is variably impacted by contamination on the Dump Site Fenced Area property. Therefore, the conclusion that the downstream transport of contaminants is limited is not supported by the data. Please modify this conclusion here and throughout the report so the conclusion takes into account the effects of transport of the contaminants.</p>	<p>However, the RIR has been modified to more clearly state that there is no significant <u>ongoing</u> transport of constituents in surface water. The data and observations upon which this conclusion is based are also more clearly presented.</p> <p>Finally, the RIR has been modified to qualify this conclusion as being supported by the data collected during the RI and under the conditions encountered during the RI. If more severe weather events are encountered, it is possible that more significant downstream transport could occur.</p>
2	<p>The only reference to the very high surface water exceedances on the Dump Site Fenced Area is that they were greater than the NJDEP FW2 standards and that downstream transport of these constituents is limited. The discussion on these exceedances attempts to conclude that the high levels may be a result of suspended solids where surface water was not filtered even though filtered pore water data shows high levels of site-related contaminants. Please revise the discussion to include specific concentration ranges of surface water which are above the NJDEP FW2 standards. Also revise the discussion attributing high levels in the surface water due to suspended solids to include the findings in the filtered pore water samples.</p>	<p>The RI has been modified to provide EPA the analyses upon which the conclusion that the suspended solids were the primary cause of the highly elevated surface water levels reported for some constituents in the samples collected in the Dump Site Fenced Area. These include a comparison of co-located pore water results, comparisons with the results from samples collected concurrently from locations immediately downstream of the two samples with the elevated surface water concentrations, and a direct comparison of the results at location WSDW0012, in which the suspended solids levels were significantly different between the two sampling events.</p> <p>The RIR has also been modified to state that, although these lines of evidence support the conclusion that the suspended solids were the primary cause of the reported concentrations in surface water, this conclusion could not be definitively determined because no filtered samples were collected.</p> <p>Finally, a section discussing the likely mechanisms limiting the mass flux of metals from groundwater and pore water to surface water has been added.</p>
3	<p>Groundwater is shallow at this site ranging from above ground surface to 7-10 ft. bgs and most likely surfaces in the intermittent channels on</p>	<p>A section has been added that discusses the predicted effects of groundwater/surface water</p>

Document/ Section	EPA Comment	Response
	<p>the Dump Site Fenced Area. Given the interconnectivity between surface water and groundwater at this site, there should be a section specific to groundwater and surface water interactions. Please include a section that specifically addresses groundwater-surface water interactions.</p>	<p>interactions on the transport of constituents from groundwater to surface water. Note that no studies specific to the interaction of groundwater and surface water were conducted; rather, the RI included components that characterized groundwater and characterized surface water. As in the case of the September 2005 sampling of pore water and surface water, these activities were sometimes conducted concurrently. These results, along with an understanding of the behavior of site-related constituents in the environment (specifically arsenic and lead) provide a basis to provide conclusions regarding the interaction of surface water and groundwater within the Dump Site Fenced Area.</p>
4	<p>The surface water bodies flowing across the Dump Site Fenced Area are shown as intermittent on the Figures. However, there is no description specifically defining the intermittent nature of these water bodies including how often the intermittent streams are visible as surface water bodies. It is likely that impacts to the surface water are variable due to the intermittent nature of the streams on the Dump Site Fenced Area. This is especially evident given the highest metals concentrations in sediments and soil are coincident with the flood plain of the intermittent streams. Please add a discussion specifically defining the nature of the intermittent streams.</p>	<p>This comment is unclear. The highest concentrations of constituents are in the former disposal area, extending from the northwestern portion of the Dump Site Fenced Area through the center of the Dump Site Fenced Area to the southwest corner, as shown on Figure 19 of the RIR. And, there is no “flood plain” within the Dump Site Fenced Area. Rather, the western and northern ends of the Dump Site Fenced Area have relatively steep slopes, while the center of the Dump Site Fenced Area is relatively flat. This area is typically wet and boggy, typical of a freshwater wetland area.</p> <p>It also unclear how the impact on surface water would be variable, depending on the flow in the intermittent streams, or how the intermittent nature of these streams would affect the findings and conclusions regarding impacts to surface water. WSDW0009 is located at the point where all of the flow from the various intermittent streams converges before White Sand Branch discharges beneath Route 561 to the Vacant Lot. This location was sampled, as per the approved RI Work Plan, during both dry and wet periods, and no constituents other than naturally-occurring aluminum and iron were found at levels greater than the surface water standards.</p>

Attachment 1

Document/ Section	EPA Comment	Response
		<p>No studies regarding the timing or flow rates have been conducted on the intermittent streams. In general, velocities are low, as would be predicted based on topography, and there have been no instances where field teams have reported that the streams were dry.</p> <p>However, as discussed above, the RIR has been modified to state that the observation of no significant ongoing transport of constituents from the Dump Site Fenced Area to downstream portions of White Sand Branch is applicable to the range of conditions encountered during the RI, and that there is the possibility that a greater degree of transport could occur under more severe weather conditions.</p>
5	<p>There are several instances in this report where it is concluded that pore water concentrations of arsenic and lead are likely the result of partitioning from soil to water. However, only pore water samples on the Dump Site Fenced Area property were tested for both total and filtered concentrations. In nearly all cases, the majority of the metals concentration was in the filtered samples. This shows that the metals found in the pore water were principally in the dissolved phase and most likely can be attributed to impacts from the groundwater. For example, 2010 data in WSPW0011 shows total arsenic was 680 ppb while filtered was 581 ppb and in lead, total concentrations were 1660 ppb and filtered were 1540 ppb. Therefore, the data do not support the conclusion that the pore water samples are the result of portioning from soil to groundwater. Please revise this conclusion here and throughout the report.</p>	<p>“Partitioning” is the term used to describe the dissolution of a constituent from the solid phase to the dissolved phase. “Partitioning coefficient” is the measure of how much of the constituent will dissolve and how much will remain in the solid phase at equilibrium. As used in the RIR, “partitioning” means that some portions of the arsenic and lead have dissolved from the solid phase and are present in the dissolved phase. The terminology has been defined in the RIR.</p>
6	<p>The Remedial Investigation Report lacks a discussion on background sampling. Considering the locations of several background samples collected in close proximity to the Dump Site, a discussion and comparison of the data are relevant to the Dump Site. Please add section describing the background samples.</p>	<p>No comprehensive background study has been conducted to date. Sampling was performed to support decision-making following the Strategic Sampling and for purposes of the BERA. However, “background” is defined as including both natural and anthropogenic sources, and no study to determine site-specific background has been performed.</p>
7	<p>Table 14 shows that SVOC and VOC TICs were found in groundwater samples, but there is no discussion on the TICs included in the</p>	<p>A discussion of SVOC and VOC TICs in groundwater has been included.</p>

Document/ Section	EPA Comment	Response
	Remedial Investigation. Please add a section which contains a discussion of the TICs, including locations and ranges of concentrations as well as any historical uses of the Site that may be relevant to the presence of TICs.	
Specific Comments		
8	Cover Page: Please correct the spelling of the word "County" on the RIR document cover page.	The change has been made.
9	Page ES-3, Executive Summary, 2nd Bullet on Pore water: The last sentence states that surface water sampling data shows no impact from the discharge of pore water to surface water. While data may support this conclusion for the downstream White Sand Branch, it is contrary to data collected from pore water and surface water on the Dump Site Fenced Area. It should also be noted that the only filtered pore water samples were collected from the Dump Site Fenced Area and the majority of arsenic and lead concentrations were shown to be in the dissolved form, meaning those concentrations cannot be attributed to suspended solids. Please revise this bullet to discuss the evidence indicating that there are impacts to surface water.	The RIR has been revised to more clearly specify that the data support a conclusion that there is no ongoing significant impact to downstream White Sand Branch surface water from pore water under the conditions encountered during the RI. The basis for this conclusion is also more clearly presented.
10	<p>Page ES-3, Executive Summary, 3rd Bullet on groundwater: This bullet states the following: <i>"Groundwater impacts are limited to shallow groundwater at depths of approximately 15 feet beneath the Dump Site Fenced Area. Arsenic and lead are found at levels greater than the Ground Water Quality Standards (GWQS) in shallow well DMMW0001, installed in an area where arsenic and lead are present in saturated soil at elevated concentrations. Both constituents are delineated to the GWQS in deeper groundwater (in DMMW0001A, at a depth of 25' - 35'). Low levels (4.1 - 5.1 micrograms per liter [µg/L]) of arsenic are present upgradient of the Dump Site Fenced Area, but these levels are attributable to a combination of elevated suspended solids and localized low dissolved oxygen (DO) levels and negative oxidation/reduction potential, and not transport of dissolved-phase arsenic from the Dump Site Fenced Area."</i></p> <p>Similar conclusions that elevated arsenic was attributed to suspended solids and not transported in the groundwater and therefore were not site-related were made in the Site Characterization Report. At the time, EPA had commented that these conclusions could not be supported without both unfiltered and filtered aqueous samples. Filtered and unfiltered samples were collected was in the vacant lot, specifically at DMMW0006A which is screened at 24-34 ft. bgs. Thus,</p>	<p>The language in the RIR has been revised to eliminate the reference to the elevated turbidity, more clearly discuss the effect that reducing conditions have on the mobility of arsenic and state that the elevated levels <i>may</i> be attributable to these factors.</p> <p>It is to be noted that filtered samples would not provide an understanding of the effects of the low DO and reducing conditions. As discussed in the RIR, it is widely accepted that reducing conditions, either natural or anthropogenic, will result in greater arsenic mobility. The arsenic species is reduced (As+3) and the iron to which the arsenic would sorb to is dissolved. This condition is observed at DMMW0002, the well this comment applies to. As shown on Figure 25 of the RIR, iron levels are elevated in DMMW0002, most likely reflecting the reducing conditions at this location.</p> <p>The comment that there is no basis to conclude that groundwater impacts are limited to shallow groundwater is unclear. DMMW0001A is within the</p>

Document/ Section	EPA Comment	Response
	<p>conclusions regarding groundwater impacts being limited to 15 ft. beneath the Dump Site Fenced cannot be made since there are no data, with the exception of DMMW0006A which is not in the Dump Site Fenced Area, to support these statements. Please revise this bullet to accurately reflect the available data.</p> <p>Also, the text in this bullet states <i>"Low levels ... of arsenic are present upgradient of the Dump Site Fenced Area, but these levels are attributable to ...and not transport of dissolved-phase arsenic from the Dump Site Fenced Area."</i> The meaning of this sentence is unclear since dissolved-phase arsenic cannot be transported upgradient. Please clarify.</p>	<p>Dump Site Fenced Area, at the same location as DMMW0001, and it is screened at 25' – 35' below ground surface. Neither arsenic nor lead was found at a concentration greater than the GWQS in DMMW0001A. Since no other shallow wells except for DMMW0002, contained arsenic or lead at levels above the GWQS, and the well installed at the next deeper interval at DMMW0001 also did not contain arsenic or lead at a concentration greater than the GWQS, the conclusion that groundwater impacts are limited to shallow groundwater would seem reasonable.</p> <p>The text has been modified to agree with the EPA comment, that "dissolved-phase arsenic cannot be transported upgradient", and provide a likely explanation for the presence of the arsenic: that the reducing conditions observed at DMMW0002 have resulted in the reduced form of arsenic and the dissolution of iron that the arsenic would sorb to.</p>
11	<p>Page ES-3, Second Paragraph of the Last Bullet, First Sentence: Please change DMMW0006 to DMMW0006A.</p>	<p>The change has been made.</p>
12	<p>Page ES-4, Executive Summary, 1st bullet on primary receptors: This bullet discusses how the primary receptor for shallow groundwater beneath the Dump Site Fenced Area is the White Sand Branch. It also indicates that measurements show there is no off-property flow of shallow groundwater and shallow groundwater discharges entirely to surface water.</p> <p>EPA's comment provided on the Site Characterization Report with regard to local hydraulic gradients has been restated below (in italics). RI data are actually supportive of the potential for local hydraulic flow regimes from the Dump Site Fenced Area to the Vacant Lot and the surrounding area. This should be included in the RI.</p> <p><i>Page 47, bullet 7: The paragraph states that the hydraulic gradients do not support the concept of a diving plume from Dumped Site Fence area to DMM0006A. However, the idea that a contaminant plume that originates from the Dumped Site Fence area can reach the screen level of DMM0006A is supported by local hydrology. Given the depth-</i></p>	<p>The EPA comment on the SCSR is acknowledged. This comment was provided in response to a statement in the SCSR that there was no ability for groundwater contaminants originating at DMMW0001, located within the Dump Site Fenced Area to be transported to DMMW0006A, located on the Vacant Lot. If DMMW0006A did contain dissolved-phase arsenic or lead at levels greater than the GWQS, the premise of the comment could be the reason the dissolved-phase arsenic or lead constituents was present.</p> <p>However, as discussed in the RIR, DMMW0006A was re-sampled, and neither dissolved arsenic nor lead was found at levels greater than the GWQS. Therefore, there is no evidence that the transport mechanism hypothesized in the comment is actually present. In fact, the absence of dissolved-phase</p>

Document/ Section	EPA Comment	Response
	<p><i>to-water of about 10 feet, a plume needs to descend only about 14 feet from the water table into the aquifer over distances of 300 to 400 feet to reach the screen in well DMM0006A. Downward vertical gradients that were estimated from hydraulic head measurements in on-property well couplets in the Dump Site area (DMMW0001/1A), together with the accretive effect of areal recharge, can induce modest descent of a contaminant plume in a water-table aquifer. Furthermore, there is evidence that arsenic contamination in soil is present below the water table (see borings DMSB0070, 0078, 0081, 0071, 0035, 0029, 0134).</i></p> <p>Please revise this bullet to discuss possible hydraulic flow from the Dump Site Fenced Area to the Vacant Lot.</p>	<p>arsenic or lead in DMW0006A would tend to support the conclusion that there is no off-property transport from the Dump Site Fenced Area to the Vacant Lot.</p> <p>There are, however, multiple rounds of water level measurements that consistently show shallow groundwater discharge to the small streams within the Dump Site Fenced Area. These results provide physical evidence that shallow groundwater within the Dump Site Fenced Area flows to the small streams that are present within the Dump Site Fenced Area.</p> <p>However, the RIR text has been revised to more clearly state that the groundwater and surface water measurements support a conclusion that groundwater flow is towards the small streams, and that these same measurement show a potential flow component from the northwest corner of the Dump Site Fenced Area towards the Vacant Lot.</p>
13	<p>Page 2-1, Section 2.1 Physical Site Setting, 4th paragraph: This paragraph describes White Sand Branch as a small stream with headwaters originating at Clement Lake, flowing through the Dump Site Fenced Area and discharging beneath Route 561. However, throughout this report the data collected from the intermittent streams, which run across the Dump Site Fenced Area and connect the downstream White Sand Branch to Clement Lake are left out. Meanwhile, this introduction refers to those intermittent streams as an integral component of White Sand Branch. Please revise this paragraph to acknowledge the presence and role of the intermittent streams in the transport of contaminants. Also please revise other sections throughout the report to include a discussion of the data collected from the intermittent streams and their potential impact in the fate and transport of contaminants.</p> <p>The document states that the White Sand Branch flows through a culvert on Route 561. The document should also clarify that the White Sand Branch flows through a second culvert at Berlin Road before reaching the United States Avenue Burn Site.</p>	<p>The intent of this comment is unclear. The surface water data that have been collected are summarized in the RIR. Five surface water samples were collected from within the Dump Site Fenced Area. Of these, location WSDW0009 is at the discharge location for all surface water originating within or flowing through the Dump Site Fenced Area. Constituents originating upstream of WSDW0009, whether in the intermittent streams or the main portion of White Sand Branch that connects with Clement Lake, would be found in the samples collected at WSDW0009. The sampling results at WSDW0009, in which other than aluminum and iron, only lead was found at a level greater than the surface water standard, support a conclusion that the intermittent streams are not significant transport pathways for constituents originating within the Dump Site Fenced Area.</p> <p>The text has been modified to state that White Sand Branch flows through a culvert beneath Berlin Road.</p>

Document/ Section	EPA Comment	Response
14	Page 2-2, Section 2.2 Ownership History, 2nd paragraph: The documents states, " <i>a deed restriction will limit ...use of the Dump Site Fenced Area and Eastern Dump Site.</i> " Please clarify as the locational description "Eastern Dump Site" is not referenced in the remainder of the document.	The Eastern Dump Site has been defined in the text.
15	Page 2-7, Section 2.5.2 Local Geology, 2nd paragraph: This section references the soil boring logs in Appendix C. A review of the soil boring logs indicate that "blue/green soil discoloration" was detected in numerous borings; however, there is limited discussion of these discolorations in the text. Please include a discussion of these soil discolorations and note if any samples were collected for laboratory analysis.	Section 3 has been modified to state that, when discolored soil was found, a sample was taken. Section 4 has been modified to state that many of the locations where the samples of discolored soil were collected are in locations where the highest arsenic and lead concentrations have been found.
16	Page 2-9, Section 2.6.2 Local Hydrogeology, 4th paragraph: The document states, " <i>The shallowest groundwater is encountered near Clement Lake and in the low-lying areas of the Dump Site Fenced Area.</i> " Please clarify if there are any "groundwater seeps" and whether the White Sand Branch is a gaining or losing stream within the Fenced Area and along its length.	<p>The RIR currently states, "As shown by the groundwater and surface water elevation data, the small streams flowing through the Dump Site Fenced Area act as localized groundwater discharge points for shallow groundwater." This sentence has been supplemented to state that, where there are surface water and groundwater elevation measurements adjacent to each other, the surface water elevation is lower, which supports the conclusion that the small streams are gaining streams.</p> <p>The text has been revised to state that no seeps have been found, but based on the steep hydraulic gradient between Clement Lake and the small streams on the Dump Site Fenced area, it is likely that there is some water transport through or below the earthen berm that forms the west side of Clement Lake.</p>
17	Page 2-9, Section 2.6.2 Local Hydrogeology, 4th paragraph: Please correct the name of MW-3 to DMMW0003.	The change has been made.
18	Page 2-12, Section 2.6.3, Potable Well Search: Please clarify if any of the confirmed private domestic wells and potential irrigation wells have been sampled in the past. These do not appear to be included on Figure 12.	A private well is located on the residential property northeast of the Dump Site Fenced Area. This property is designated Property A-1 in the Residential Properties RIR and FS. This well has been sampled, and the only constituent found at levels greater than the New Jersey Drinking Water Standards was iron. The results of the sampling are provided in the Residential Properties RIR. These data have not

Attachment 1

Document/ Section	EPA Comment	Response
		been included in the Dump Site RIR because the results of the sampling did not find site-related constituents, and the need for confidentiality for the data.
19	Page 3-2, Section 3.0, Previous Investigations: This section mentions the installation of a silt fence as part of a removal action in 1997, but it is unclear if this silt fence is still in place. Please include this information. Also please add a discussion describing the material under the caps in the Dump Site Fenced Area as well as any sampling of that material.	The text has been modified to state that the fences continue to be maintained. Additionally, the text has been revised to provide a summary of the results of the historic sampling conducted in the capped areas.
20	Page, 3-2, Section 3.0 Previous Investigations, 2nd paragraph: The document states, <i>"The results of the NJDEP and EPA sampling have not been used for purposes of defining the nature and extent of contamination ...since sampling conducted as part of the RI encompassed all of the locations sampled by NJDEP and EPA."</i> The document must include an in-depth summary of the pre-2005 samples as well as a comparison to post-2005 samples to confirm that all contaminant concentrations detected in pre-2005 samples are represented in the nature and extent discussions. Please add such a summary.	<p>This comment is inconsistent with the EPA comment on the SCSR that requested a summary of the historical investigations conducted by EPA and NJDEP be included. General Comment 1 to the SCSR requested this information to "...provide (to a reviewer) the sequence of events since Sherwin-Williams operations at the former manufacturing facility in Gibbsboro, New Jersey ceased in the late 1970's." The comment specifically states;</p> <p>"Data tables and an extensive qualitative summary of the results are not being requested..."</p> <p>The text has been revised to provide the rationale for not using the historic data for decision-making. Specifically, the majority of the samples were analyzed only by XRF, the locations of the samples are known only approximately, and the quality assurance/quality control data have not been available for review.</p> <p>The text of the RIR has also been modified to specifically state that all constituents have been delineated to the applicable screening criteria in all media so that the results of the pre-2005 sampling are addressed in the discussion of the nature and extent of the contamination in all media.</p> <p>A summary of the historic data and analytical results is presented in Appendix D.</p>

Document/ Section	EPA Comment	Response
21	Page 3-9, Section 3.1.4 Supplemental Groundwater Investigation (2009-2010), 3rd bullet: This bullet discusses the installation of 3 additional pore water collection points. Please include the sample names of these 3 samples (WSPW0014, WSPW0015, WSPW0015) so they can be referenced on the map.	The change to the text has been made. The pore water locations are depicted on Figure 9.
22	Section 4.1 Soil Results, Page 4-6, last bullet: The document references that delineation to the eastern portion of the site is defined by borings DMSB0056, DMSB0036, DMSB0064, DMSB0063 and DMSB0052. These borings do not adequately define the eastern the boundary. This boundary excludes Soil Cap Area 3 and boring locations DMSB0015 and DMSB0057 from the eastern extent of contamination. Please revise the text to include these borings.	The text has been revised to specifically discuss the delineation of DMSB0051 and DMSB0057. Please note that samples collected immediately to the west, south and east of Soil Cap Area 3 did not contain constituents at levels greater than the residential screening criteria.
23	Section 4.1 Soil Results, Page 4-7, 2nd bullet: The document states the horizontal delineation to the west is by "a series of borings beginning at DMSB0093, running to the west and extending to DMSB0123." However, the document does not reference any other specific borings in this horizontal delineation to the west. According to Figure 14, there are 8 borings to the west of DMSB0093 and DMSB0123 where contamination was detected. Please revise the text to include the borings to the west of DMSB0093 and DMSB0123.	The text has been clarified to identify the "series of borings running to the west of the commercial building..." that were referenced in the text cited in the comment.
24	Page 4-8, Section 4.1, Soil Results: Figure 19 (Arsenic and Lead Distribution in Soil) only includes laboratory analytical data and does not include the XRF data. Though the document states that the XRF data is similar to the laboratory data, with the exception of the Vacant Lot Developed Area, a similar constructed map depicting XRF data is necessary to fully evaluate the nature and extent of contamination. Please add such a map.	Figure 19 has been revised to include the XRF results.
25	Page 4-9, Section 4.2, TAL Metals and Cyanide, First Bullet, last sentence: Please change WSSD0004 to WSDD0004.	The change has been made.
26	Page 4-9, Section 4.2, TAL Metals and Cyanide, Second Bullet, second to last sentence: Please change "or" to "of".	The change has been made.
27	Page 4-10, Section 4.2 Sediment Results, PAHs, 3rd bullet: The document states, "Chrysene is found at levels greater than the ESC in WSDD0004 and in WSDD0005 and WSDD0006 ... " Please clarify, as Table 7 and Figure 21 do not note chrysene as being detected in the sediment at WSDD0005.	Chrysene is not found at levels greater than the ESC in WSDD0005. The text has been revised, as applicable.
28	Page 4-11 to 4-13, Section 4.3 Surface Water Results: This section omits a discussion of the lead and arsenic concentrations found in the surface water samples on the Dump Site Fenced Area. Total arsenic concentrations as high as 62,800 ppb were measured in surface water samples. It is unclear why these high concentrations as well as the	Section 4.3 has been substantially revised to address this comment. Language has been added to specify that the conclusion regarding the surface water transport of arsenic and lead is applicable to the downstream portions of White Sand Branch under the

Document/ Section	EPA Comment	Response
	<p>other high concentrations found in surface water and pore water on the Dump Site Fenced Area are not included in the RI discussion.</p> <p>Since data are summarized in bulleted form, there should be a bullet that addresses the pore water and surface water concentrations in the Dump Site Fenced Area. The text states that the high levels of suspended solids support a conclusion that the concentrations of constituents found in the surface water were likely resulting from the presence of solids in the samples. This conclusion is not supported by the data. Surface water samples were not filtered and pore water data indicate that a majority of the total arsenic and lead in the pore water were in the filtered form. This shows the possibility that high levels are present despite the presence of solids.</p> <p>It should be noted that suspended solids which impact the surface water are considered a component of the surface water. Please clarify to note that the downstream transport of contaminants as <u>dissolved constituents</u> in surface water is of limited concern but that actual transport of contaminated sediments by surface water is an issue.</p> <p>Also, the discussion that states downstream transport is limited is not supported by sediment and soil data from the downstream portion of White Sand Branch. Please amend this section to include all the available data for the surface water and pore water accordingly and make sure that all the conclusions are well supported.</p> <p>The document only discusses lead and arsenic in surface water west of Route 561. Please include a discussion of lead and arsenic in surface water within the Dump Site Fenced Area.</p>	<p>conditions encountered during the RI. The section has also been revised to identify the locations where the elevated levels of metals were reported within the Dump Site Fenced Area and to summarize the basis for the conclusion that the results were primarily the result of suspended solids.</p>
29	<p>Page 4-12, Section 4.3, first full paragraph, second paragraph: Please change "As shown on Figure 21" to "As shown on Figure 22".</p>	<p>The change has been made. The correct figure is now referenced in the text.</p>
30	<p>Page 4-14, Section 4.4.1 Pore Water Results: In this section there is a discussion on how pore water is typically not mobile. The basis for this is unclear. The explanation seems to be that the slow sample recovery in WSPW0015 and WSPW0016 indicates that pore water was held in place by entrapment or capillary forces, and therefore would not be a source of groundwater contamination. Please clarify this rationale since the conclusions drawn from it are not clear.</p> <p>Surface water is impacted in the Dump Site Fenced Area where pore water contaminant concentrations are high and the contaminants</p>	<p>The text has been revised to include the EPA citation regarding the mobility of pore water and its use as an indicator of the equilibrium concentrations of constituents. The text has also been revised to note that slow recharge was not observed in all locations.</p>

Document/ Section	EPA Comment	Response
	principally found in the dissolved phase. Thus, the data support a conclusion that pore water is in fact mobile and impacting surface water. Those two samples with poor recovery are only two of 8 pore water samples collected on the Dump Site Fenced Area and may not be representative of the site-wide interactions between pore water and surface water. Please revise to clearly explain and support the potential interactions between pore water and surface water.	
31	<p>Page 4-14, Section 4.4.1.1 Pore Water Results, Comparison to Groundwater Standards: This section does not provide a summary of the numerical results of arsenic and lead concentrations found in the pore water. It also fails to note that filtered and unfiltered samples were collected from some of the sampling locations and those results indicated that the majority of total Pb and As were in the unfiltered form, meaning the concentrations are mostly in the dissolved phase. This is pertinent information that should not be left out of the discussion. Please amend this section to include these data.</p>	<p>This comment is unclear. Figure 24A of the RIR clearly showed the constituents present in pore water at concentrations greater than the GWQS. The text does not specifically cite all of the values of the pore water results, but it clearly identifies the constituents that are present at levels above the GWQS.</p> <p>Additionally, the discussion of results in Section 4.4.1.3 does cite the range of concentrations of arsenic and lead in comparison to the adjacent soil concentrations.</p> <p>Also, there is a specific discussion of the possible effects of solids entrainment on the results. The text states, <i>"In general, the entrainment of solids into the pore water samples does not appear to have significantly affected the pore water results from the samples obtained in 2009 – 2010, but may have been more influential on the results reported in 2005."</i> This addresses the question of whether the elevated pore water results in 2009 – 2010 were influenced by particle entrainment.</p>
32	<p>Page 4-17, Section 4.4.1.3 Pore Water Results, Discussion of Results: The second conclusion in the report is that "pore water is not a significant source of constituents to surface water or off-site migration in groundwater;" It is unclear how a conclusion can be made considering the high concentrations of arsenic and lead found in surface water samples on the Dump Site Fenced Area and the fact that unfiltered arsenic and lead are also well above groundwater and surface water criteria in pore water samples collected from nearby locations. Please revise this section to support the conclusion or revise the conclusion.</p>	<p>The text has been revised to provide a detailed analysis for the conclusion that the highly elevated surface water results reported for two locations within the Dump Site Fenced Area were primarily the result of the suspended solids in the samples, but acknowledges that there may have been some contribution of pore water to the results. The text has also been revised to more clearly cite the results of the samples collected immediately prior to and immediately after White Sand Branch discharges to the Vacant Lot. Finally, the text has been revised to</p>

Document/ Section	EPA Comment	Response
		state that the conclusions regarding downstream transport are valid for the conditions encountered during the RI.
33	Page 4-20 Paragraph following the bullets: the text states, " <i>The elevated TDS and depressed pH levels do not appear to be related to any historical discharges within the Dump Site Fenced Area.</i> " Table 6 of Appendix B shows, that for most of the sampling locations, the pH values have been rising over time. Usually this indicates that the depressed pH in the area is rebounding from contamination and the depressed pH is not from natural sources. Therefore, please remove this statement.	<p>The specific language cited in the comment has been removed.</p> <p>However, the comment that there is a "rebounding" pH is based on a low number of measurements and is not necessarily correct. For most of the monitoring wells, there are only two rounds of pH measurements and the measurements are only one year apart. This does not provide an adequate basis to conclude that there is a consistent trend. For example, in some of the wells, there has not been a "rebound". For example, the pH in DMMW0007 declined between 2009 and 2010 from 6.77 to 5.36. The pH in the deeper wells DMMW0005A and DMMW0006A have remained constant.</p>
34	Page 4-24, Section 4.4.2, 2nd paragraph: The text states that cadmium concentrations are dependent on pH and that pH and geochemical conditions may be the cause of cadmium in groundwater at this location. It should be noted that pH of less than 5 is not unique to DMMW0006A. The DMMW0006 cluster is downgradient of the DMMW0001 cluster suggesting that migration from the fenced area cannot be ruled out. This location should be referenced in relation to historic dumping activities and not limited to influences from the Dump Site Fenced Area alone. A figure illustrating the extent of dump activities would be helpful in the endeavor. Based on Appendix A of this report dumping activities may have been present in the vicinity of DMMW0006A and should be stated as such. Please revise this section to include all the possible dumping activities in the vicinity and the possibility of migration of contaminants. Also add a figure to show the extent of the historic dumping activities.	<p>A discussion regarding the distribution of cadmium in soil has been included in the document, and a new Figure 20 showing all of the cadmium results in soil samples has been provided. The pore water discussion has been revised to acknowledge that the cadmium found in pore water is likely the result of the cadmium in soil near the locations where the cadmium in pore water has been observed, and to draw conclusions regarding the potential for the cadmium in soil to act as a source of the cadmium observed at DMMW0006A. The text has also been revised to acknowledge that the depressed pH is observed in other wells where no cadmium is found.</p> <p>Historic activities are discussed in Section 2.4 – Aerial Photograph Review, however there is no information available in the files that would enable the construction of a figure depicting the extent of dumping activities.</p>

Document/ Section	EPA Comment	Response
35	Page 4-24, paragraph 3, last 2 sentence: These statements are overly broad. It is not accurate to state that shallow groundwater does not migrate off site and that there is no impact on surface water from groundwater discharges. The water table is high in this area and changes with the seasons and storm events. It is more accurate to conclude that all the water sources interact to some extent and to state that the interaction may be intermittent or minimal. Please revise this section to reflect this.	The language in the text has been revised to be more specific and state that the observations are valid for the conditions encountered during the RI. The language has also been modified to specifically state that the groundwater and surface water elevation measurements show the flow of groundwater.
36	Page 4-24, section 4.5 Soil Gas Results - Vacant Lot: In addition to being compared to state levels, these results need to be compared to EPA's Vapor Intrusion Screening Levels (VISL) as well. The VISL calculator spreadsheet is available at: http://www.epa.gov/oswer/vaporintrusionlguidance.html . Current state and federal screening levels need to be used for this analysis. Please be mindful of the units (the screening levels are reported in ug/m3; the soil gas results should be reported in the same units).	The RIR has been revised to also compare the soil gas results to the VISL.
37	Page 5-1, Section 5.0 Human Health Risk Assessment: The exposures areas as defined in the Human Health Risk Assessment and the Remedial Investigation are slightly different. Please add a discussion about these differences when this section is added to the full RI report. Also please add a description of NJDEP's designation of the impacted groundwater beneath the site, NJDEP's designation of the surface water at the site, and the zoning of the differing exposure areas within the Route 561 Dump Site Investigation Area.	At the direction of EPA, no summary of the HHRA will be included in the RIR.
38	Pages 7-1 to 7-8, Summary and Conclusion: This entire section needs to be revised to be consistent with the changes requested in this comment letter. Please ensure that all the conclusions are fully supported by the existing data and are consistent with the Executive Summary.	The conclusions have been revised to reflect the changes made in the RIR to address EPA's comments.
39	Page 7-6, Section 7.4, Groundwater and Pore Water: This section describes how there is no off-site shallow groundwater flow with the exception of <i>"some potential flow from the northwest corner of the Dump Site Fenced Area towards the northern portion of the Vacant Lot."</i> However, there are insufficient data to support this conclusion. Please revise this section to include a discussion of the potential for off-site flow in the shallow groundwater.	The groundwater and surface water elevation measurements upon which Figures 10 and 11 are based show a potential groundwater flow component from the northwest corner of the Dump Site Fenced Area towards the Vacant Lot. The text has been revised to specifically cite the groundwater and surface water measurements.

Document/ Section	EPA Comment	Response
40	Page 7-8, Section 7.6, Conclusion: Please remove the second sentence about the HHRA and BERA being in preparation or revision.	As directed by the EPA during a DATE conference call, the RIR is being submitted without summaries of either the HHRA or BERA. The statement has been removed from the Conclusion, but is noted in the Introduction.
41	<p>Figures: Surface water and groundwater interactions are a concern at the Dump Site Fenced Area and there are several conclusions in the report drawn from comparing the different sampling media to one another (e.g. soil, sediment, pore water, surface water, and groundwater). It will be useful have this information shown on a single figure.</p> <p>Conclusions such as <i>"surface water sampling data show no impact from discharge of pore water to surface water"</i> are made in this report. There is no figure which visually demonstrates and supports this conclusion. For example, Figure 24 of the Groundwater Exceedances in Dump Site Fenced Area should also include information contained in Figures 21 (sediment sample exceedances in Dump Site Fenced Area), Figure 22 (surface water exceedances), and Figure 23A (pore water exceedances in Dump Site Fenced Area). Similarly, this should be provided for White Sand Branch figures. Surface water, sediment, and pore water data should be provided on one figure.</p> <p>Please develop one map that includes the information from Figures 21, 22, 23A and 24. If the information appears too cluttered, please create a cross-media map which shows just lead and arsenic concentrations.</p>	A new Figure 26 has been included that provides the requested data. As discussed in several responses to EPA's comments, the RIR has been revised to more specifically state that there is no significant ongoing impact to downstream surface water under the conditions encountered during the RI. The RIR has also been modified to more clearly state the basis for the conclusion.
42	Figure 21: The legend indicates that the exceedances of the NJDEP levels are shown in red. However, the exceedances are not in red. Please edit the map so that the exceedances are shown in red.	Due to the inclusion of additional figures in the RIR, former Figure 21 has been renumbered as Figure 22. All results shown on Figure 22 represent an exceedance of the NJDEP ESC. The legend has been revised to remove the inference that the sample results would be shown in red.
43	Table 4, Groundwater and the Pore Water Screening Evaluation Tables: Please clarify the footnote "(b) Comparison criteria are 2009 Gibbsboro Groundwater Screening Criteria" as the document states (on Page 3-5) "The primary screening criteria for ground water and pore water data were the NJDEP Ground Water Quality Standards	The table has been revised.

Document/ Section	EPA Comment	Response
	(GWQS) ... " In addition, it should be noted that several volatile organic compounds (VOCs) are missing their respective groundwater criteria. Also please add the missing criteria.	
44	Table 4 Sediment Screening Evaluation Table: Please clarify the meaning of the yellow and beige highlights as well as the red text found on the Table 4 Sediment Screening Evaluation Table.	The table has been revised and the highlights were removed.
45	<p>Appendix D: Appendix D consists of only a limited number of tables and one figure and does not include an actual summary of the pre-2005 historic data as suggested in the document. Please make the following changes to Appendix D:</p> <p>Include a text summary of the pre-2005 data;</p> <p>Include a summary table of all media sampled by the Department and USEPA outlining: all contaminants analyzed and detected, range of concentrations, maximum concentrations (and where detected), number of detections, etc.;</p> <p>Revise the "NJDEP Groundwater Table and the 1994 NJDEP Soil Sample Table to reference sample locations and depth, and include all analytical parameters not just select metals;</p> <p>Revise the August 1995 EPA Soil Sample Tables to include sample depths and locations, and include all analytical parameters, and clarify the difference between the two similarly named tables;</p> <p>Revise the EPA Sediment Table to include all analytical parameters, referencing any co-located surface water samples; and</p> <p>Revise Figure D-I to differentiate between samples collected by NJDEP and USEP A, as well as include sample locations for all groundwater and surface water sample locations.</p>	Appendix D has been significantly revised to address this comment. Revised figures have been prepared depicting the pre-2005 sample locations and which agency collected that sample, along with a figure depicting results greater than screening criteria. Summary tables of the historic data and analytical results are also provided in Appendix D.
46	Please add an electronic set of all the low flow sampling logs.	The complete low flow sampling logs for the groundwater sampling events are included in Appendix B, Attachment 6.